

Claims

- [c1] A bone screw, comprising:
a head;
a shank having a proximal portion with a constant minor diameter, and a distal portion with a minor diameter that decreases in a proximal-to-distal direction; and
opposed first and second helical threads, the threads extending around at least a portion of a length of the shank and defining a thread depth that remains constant along the length of the shank.
- [c2] The bone screw of claim 1, wherein a major diameter of the shank at a distal tip of the shank is equal to or less than the minor diameter of the proximal portion of the shank.
- [c3] The bone screw of claim 1, wherein the distal portion of the shank has a length that is about 10 mm.
- [c4] The bone screw of claim 1, wherein the distal portion of the shank has a length that comprises at least about 10% of a length of the bone screw.
- [c5] The bone screw of claim 1, wherein the bone screw has a length in the range of about 20 mm to 100 mm, and the

distal portion of the shank has a length of about 10 mm.

[c6] The bone screw of claim 1, wherein a root of each of the opposed first and second helical threads has a width extending between proximal and distal facing flanks that remains substantially constant along the length of the shank.

[c7] The bone screw of claim 1, wherein a crest of each of the opposed first and second helical threads has a width extending between proximal and distal facing flanks that remains substantially constant along the length of the shank.

[c8] The bone screw of claim 7, wherein the width of the crest is about 0.2 mm.

[c9] The bone screw of claim 1, wherein the opposed first and second helical threads define a pitch of about 6 mm.

[c10] The bone screw of claim 1, wherein the opposed first and second helical threads each have proximal and distal flanks that converge toward one another from a root to a crest thereof.

[c11] The bone screw of claim 10, wherein the proximal and distal flanks converge toward one another at substantially the same rate.

- [c12] The bone screw of claim 1, wherein the opposed first and second helical threads each have proximal and distal flanks that converge toward one another at an outer-most crest thereof to form a flat edge.
- [c13] The bone screw of claim 1, wherein the minor diameter at the proximal portion of the shank is in the range of about 3 mm to 5 mm, and wherein the minor diameter at the distal portion of the shank is less than the minor diameter at the proximal portion of the shank.
- [c14] The bone screw of claim 1, further comprising a distal tip formed on a distal-most end of the shank.
- [c15] The bone screw of claim 14, wherein the distal tip is a self-tapping tip.
- [c16] A bone screw, comprising:
a head having a driver-receiving element formed thereon;
a shank formed from first and second axially symmetrical threads offset approximately 180° from one another and extending around at least a portion of the shank between proximal and distal ends thereof, the threads having a depth that remains constant along a length of the shank, and a proximal portion of the shank having a minor diameter that is equal to or greater than a major di-

ameter of the shank at a distal-most end thereof.

- [c17] The bone screw of claim 16, wherein a proximal portion of the shank has a substantially constant minor diameter, and a distal portion of the shank has a minor diameter that decreases in a proximal-to-distal direction.
- [c18] The bone screw of claim 16, wherein the distal portion of the shank has a length that is at least about 10% of a length of the bone screw.
- [c19] The bone screw of claim 16, wherein the distal portion of the shank has a length that is about 10 mm.
- [c20] The bone screw of claim 16, wherein the bone screw has a length in the range of about 20 mm to 100 mm, and the distal portion of the shank has a length of about 10 mm.
- [c21] The bone screw of claim 16, wherein a root of the threads has a width extending between proximal and distal facing flanks that remains substantially constant along the length of the shank.
- [c22] The bone screw of claim 16, wherein a crest of each the threads has a width extending between proximal and distal facing flanks that remains substantially constant along the length of the shank.

- [c23] The bone screw of claim 22, wherein the width of the crest is about 0.2 mm.
- [c24] The bone screw of claim 16, wherein the threads define a pitch of about 6 mm.
- [c25] The bone screw of claim 16, wherein the threads each have proximal and distal flanks that converge toward one another from a root to a crest thereof.
- [c26] The bone screw of claim 25, wherein the proximal and distal flanks converge toward one at substantially the same rate.
- [c27] The bone screw of claim 16, wherein the threads each have proximal and distal flanks that converge toward one another at an outer-most crest thereof to form a flat edge.
- [c28] The bone screw of claim 16, further comprising a distal tip formed on a distal-most end of the shank.
- [c29] The bone screw of claim 28, wherein the distal tip is a self-tapping tip.
- [c30] A bone screw, comprising:
 - a head;
 - a shank having a proximal portion with a constant minor

diameter, and a distal portion with a minor diameter that decreases in a proximal-to-distal direction; and opposed first and second helical threads formed on at least a portion of the shank and defining a major diameter that decreases at the same rate as the minor diameter of the shank.